

ABSTRACT

A system, method and means is provided for withstanding mechanical shock for use with fluid dynamic bearings. A sealing system is provided that withstands 1000 G shock events. In an aspect, a grooved pumping seal employed between a thrust plate and a shield, a thrust plate having spiral grooves, a fluid recirculation passageway, and a reservoir creates an asymmetric pressure gradient. In an aspect, fluid is retained and air is purged utilizing an enlarged fluid reservoir, axial channels and an angled fill hole. In an aspect, a shaft is attached to a top cover supplying radial stiffness, and an enlarged single-sided thrust plate improves dynamic parallelism.